

## **IN THE SPECIFICATION**

Please replace the paragraphs beginning at page 1 line 6 with the following rewritten paragraphs:

--A swing head structure of a wrench with two kinds of torque output ~~mainly comprises~~ includes a head part and a handle, pivotally coupled together by a shaft ~~pivot to adjust swing angles and positioning of the head part~~, the wrench can also be used as a ratchet wrench or can rotate the handle backwards and forwards to make the head part to rotate in one direction ~~speedily~~, the rotating direction can be changed, the swinging movement of the head part does not affect the rotation and transmission of the wrench and the handle, the swinging head part having two kinds of torque output to the wrench.

The US patent no. 6311583 and Taiwan patent with publication no. 553808 of "A Ratchet Wrench", both ~~having~~ includes a head part which can rotate ~~pivotally~~ in corresponding to the handle part, but their functions ~~is~~ are too simple and ~~with~~ having a much complicated structure.

### **Summary of the Invention**

The ~~mainly~~ main purpose of the present invention is to provide a swing head structure of a wrench with two kinds of torque output. The wrench comprises a head part and a handle, the handle can be made as a combination of a long shaft and a handle part, the head part comprises a sleeve socket, a ratchet head and a switching-control part. The head part can be swung in different angles and positioned by a shaft ~~pivot~~. The wrench can be used as a general

ratchet wrench or can rotate the handle forward and backward to make the head part to rotate in one direction ~~speedily~~, the rotating direction can be changed by a switch-control mechanism. The swinging movement of the head part does not affect the rotation and transmission of the wrench and the handle. The swinging head part also ~~having~~ includes two kinds of torque output to the wrench.

The present invention will become more fully understood by reference to the following detailed description ~~thereof~~ when read in conjunction with the attached drawings.

### **Brief Description of the Drawings**

Fig. 1 is ~~perspective~~ an exploded view of a swing head structure of a wrench with two kinds of torque output;

Fig. 2 is a partial cross sectional ~~assembly~~ view of ~~a the~~ swing head structure of ~~a the~~ wrench ~~with two kinds of torque output~~;

Fig. 3 is a partial cross sectional view ~~of a swing head structure of a wrench with two kinds of torque output in swing movement~~ illustrating a driving operation of the swing head structure;

Fig. 4 is a perspective view ~~a swing head structure of a wrench with two kinds of torque output being used~~ illustrating the operation of the swing head structure;

Fig. 5 is a perspective view ~~of a swing head structure of a wrench with two kinds of torque output in speedy rotation~~ illustrating the rotational operation of the swing head structure;

Fig. 6 is a perspective view ~~of a swing head structure of a wrench with two kinds of torque output in swing head movement~~ illustrating the swinging operation of the swing head structure;

Fig. 7 is a ~~perspective~~ partial exploded view of ~~a ratchet the~~ wrench of the present invention;

Fig. 8 is ~~a perspective~~ an exploded view ~~of a ratchet of the~~

~~present invention of~~ illustrating another embodiment of the wrench;

Fig. 9 is ~~perspective an exploded view of a swing head structure of a wrench with two kinds of torque output of a second~~ illustrating a further embodiment of the wrench;

Fig. 10 is ~~perspective an exploded view of a swing head structure of a wrench with two kinds of torque output of a third~~ illustrating a still further embodiment of the wrench.

### **Detailed Description of the Preferred Embodiment**

Referring to Figs. 1 and 2, the present invention of a swing head structure of a wrench with two kinds of torque output, ~~which mainly~~ comprises a sleeve socket 10, with ratchet teeth 11 disposed on its inner circumference, its upper and bottom sides each having a trough 12 for placing ring-shaped gears 13 and 14 respectively. The sleeve socket 10 ~~having a placing part 15 on~~ includes a compartment 15 formed in its one side along its ~~axis~~ axial direction for placing a transmission gear 16, the teeth shape of the transmission gear 16 can mesh with the ring-shaped gears 13 and 14.

Referring to Fig. 8, the present invention also comprises a ratchet head 20, which having a dual-surfaces 21 for assembling bent elastic pieces 23 and 24, as well as circular rods 25 and 26 respectively. The ~~fronts~~ front portions of the bent elastic pieces 23 and 24 are ~~being~~ bent in such a way ~~that can~~ to limit and position the circular rods 25 and 26, while the back sections of the bent elastic pieces 23 and 24 are pressed against curved troughs 271 and 272 of a control switch 27 respectively. The other side of the control switch 27 ~~having~~ includes a hole 273 for placing springs 274 and pressing elements ~~of a spring 274 and a pressing piece 275~~. Two curved pressing pieces 28 each ~~having~~ includes a central hole 281 ~~is~~ for rotatably inserting a rod 282 ~~for positioning purpose~~. When the

curved pressing pieces 28 are ~~being~~ pressed by the springs 274 and the pressing elements 274 and 275 to one side, ratchet gears 283 and 284 of the curved pressing pieces 28 are ~~being~~ selectively pressed against the ratchet teeth 11 of the sleeve socket 10, ~~so that idling is achieved~~ in order to change rotating direction.

A long shaft 30 ~~having~~ includes a long hollow hole 31 ~~disposed~~ formed along its axial direction, and a protruded ear 301 disposed on its front part, a hole 32 is ~~disposed on~~ formed in the ear 301 for inserting a bolt 33 and a medium gear 34. The sleeve socket 10 ~~having~~ includes a protruded ear 40 and ~~having~~ a hole 41 ~~is disposed on it, accordingly,~~ formed therein for rotatably receiving the bolt 33 goes through the hole 41 of the sleeve socket 10, thus the sleeve socket 10 can pivotally swing on it. A trough 35 is ~~disposed on~~ formed in one side of the ~~hole 32 of the long shaft 30~~ protruded ear 301, a switch-control 36 is placed inside the trough 35 and secured to the protruded ear 301 by using a screw 37 ~~to lock with~~ and the bolt 33, ~~the trough 35 having~~ the protruded ear 301 includes a ball hole 38 ~~disposed inside~~ formed therein and communicating with the trough 35 for placing a steel ball 39 which is ~~connected to~~ engageable with a concave dot 43 ~~disposed on~~ that is formed in a concave surface 42 of the protruded ear 40. When the switch-control 36 is not pressed against the steel ball 39, the sleeve socket 10 can rotate and swing freely. When the switch-control 36 is pressed against the steel ball 39, ~~it is also~~ which is intern pressed against the concave dot 43 of the protruded ear 40, ~~so that~~ the sleeve socket 10 can be positioned.

A handle 50 ~~having~~ includes a long round shaft 51 ~~to insert~~ inserted through the long hollow hole 31 of the long shaft 30. A screw 52 is used to lock a transmission gear 53 onto the front part of

the round shaft 51.

Referring to Figs. 1, 2, 3 and 8, when assembling, the curved pressing ~~pieces~~ piece 28 is positioned by the rod 282, and the spring 274 and the pressing ~~piece~~ element 275 are inserted into the hole 273 of the control switch 27 to press against ~~on~~ the curved pressing piece 28. Curved elastic pieces 23 and 24 as well as circular rods 25 and 26 are also assembled on the ratchet bead 20. The ring-shaped gear 13 and the ratchet head 20 are inserted into the sleeve socket 10. The ring-shaped gear 14 is also inserted into the sleeve socket 10 on the other side, then by using a pad ring 17 and a spring pad 18 ~~to hook on~~ for being retained within a trough 29 of the ratchet bead 20, so that the ratchet head 20 and related elements will ~~fall apart~~ not be disengaged from the sleeve socket 10. The round shaft 51 of the handle 50 ~~goes~~ is engaged through the long hollow hole 31 of the long shaft 30, and then ~~use~~ using the screw 52 to lock the transmission gear 53 onto the front part of the round shaft 51. ~~The sleeve socket 10 a compartment 80 for placing the transmission gear 16 to mesh with the ring shaped gears 13 and 14. Align the~~ The hole 32 of the long hollow shaft 30 is aligned with the hole 41 of the sleeve socket 10, ~~then assemble~~ for assembling the medium gear 34 and the bolt 33 therein. The ball hole 38 of the long shaft 30 is for placing the steel ball 39, the switch-control 36 is used to press against ~~on~~ the steel ball 39, then ~~use~~ the screw 37 is used to bolt the switch-control 36 onto the bolt 33.

Referring to Fig. 4, the present invention ~~being~~ may be used as a wrench. It uses the ratchet head 20 having a sleeve part 60 which can be ~~sleeved~~ engaged on a bolt. Hold the handle 50 and move it back and ~~fre~~ forth on the same level, the ratchet head 20 can be rotated to the opposite direction ~~idly~~ by having the curved pressing

piece 28 ~~mesh~~ meshed with the gear 11 (referring to Fig. 2). ~~By turning the~~ The switch-control 27 may be rotated to change ~~the directions of both~~ to either idling and or transmission direction (referring to Fig. 8).

Referring to Fig. 5, ~~which shows the operation by turning the handle 50 in dual directions to make the ratchet head 20 to turn in single direction speedily. By~~ by quickly turning the handle 50 to transmit the rotating force to the medium gear 34 through the transmission gear 53 (referring to Fig. 2), then to the transmission gear 16 through the medium gear 34, the transmission gear 16 may then make the ring-shaped gears 13 and 14 to rotate (referring to Fig. 1). ~~If the rotating direction is the same as the circular rods 25 and 26, then the~~ The ratchet head 20 can be controlled by the circular rods 25 and 26 either to be rotated or to be idled. Vice versa, it turns idly. Because the rotating directions of the ring shaped gears 13 and 14 are different, the back and fro rotation of the handle 50 allows one set of the ring shaped gears 13 and 14 to make the ratchet head 20 to rotate continuously, so that one can speedily adjust rotation.

Referring to Figs. 2, 3 and 6, if ~~want~~ it is going to adjust the swing movement, ~~turn~~ the switch-control 36 can be turned so that it does not press against the steel ball 39, then the sleeve socket 10 can ~~rotate on~~ be rotated relative to the bolt 33 as its axis, the transmission gear 16 will rotate together with the medium gear 34, until the desired position is ~~adjusted~~ reached, turn the switch-control 36 again to make the steel ball 39 to press against the concave dot 43 of the protruded ear 40 of the sleeve socket 10, so that ~~the angle of~~ the sleeve socket 10 can be fixed to the long shaft 30 at the selected angle.

Referring to Fig. 7, a ratchet head 70 ~~having~~ includes two

placing troughs 72 for placing two locking pieces 71 respectively, and a hole 74 for receiving an initiate piece 73 ~~to go through~~, the two locking pieces 71 each ~~having~~ includes a positioning trough 711 ~~disposed on~~ formed in its inner end. The initiate piece 73 ~~having~~ includes a positioning steel ball 79 and an elastic element 75 in corresponding to the positioning trough 711. The initiate piece 73 is turned and adjusted by a wheel 76 to make the locking piece 71 to swing in an opposite direction. The two locking pieces 71 ~~each having a~~ are disposed within the ring-shaped gear-wheel gears 78 ~~sleeved outside~~. The two ring-shaped ~~gear-wheels gears~~ 78 each ~~having~~ includes ratchet teeth 781, which can be meshed with an inclined wheel 771 that is disposed on top ~~the~~ of a transmission shaft 77. The two ring-shaped ~~gear-wheels gears~~ 78 each ~~having~~ includes an inner ratchet gear 782, while an outer ratchet gear 712 is disposed outside the two locking pieces 71.

Referring to Fig. 9, a wrench ~~having~~ includes a sleeve socket 10 on its one end, and a long shaft 30 on the other end, a first compartment 15 is ~~disposed~~ formed inside the sleeve socket 10 for placing a transmission gear 16, a protruded piece 81 ~~having~~ includes a second compartment 82 for placing a medium gear wheel 34. A passage part 83 is formed between the first compartment 15 and the second compartment 82, ~~which is for~~ allowing the sleeve socket 10 to be pivotally connected to the long shaft 30 ~~and is not entirely hollow inside, which can enforce the structure of the sleeve socket~~ 10.

As for the swing head structure of the wrench, the sleeve socket 10 ~~having~~ includes the protruded piece 81, the second compartment 82 is ~~disposed on~~ formed in the protruded piece 81 for placing the medium gear 34. The sleeve socket 10 ~~having~~ includes

the transmission gear 16 disposed inside to transmit two ring-shaped gears 13 and 14 that are disposed inside the sleeve socket 10, the medium gear 34 ~~of the second compartment 82 of the protruded piece 81 then transmit~~ is engaged with a transmission gear 53 ~~of the handle structure~~ and the transmission gear 16 of the sleeve socket 10.

Referring to Fig. 10, a sleeve socket 10 ~~having~~ includes a protruded ear 90 for ~~sleeving~~ engaging on a protruded ear 91 of the long shaft 30. A plurality of concave dots 92 are ~~disposed on~~ formed in one side of the protruded ear 91 of the long shaft 30, a trough 93 is ~~disposed on~~ formed in one side of the protruded ear 90 for placing a switch-control 36, a steel ball hole 94 is ~~disposed on~~ formed in the protruded ear 90 for placing a steel ball 39, which can be controlled by the switch-control 36 and positioned on the concave dots 92.--.